

R E M A R K S

Careful review and examination of the subject application are noted and appreciated.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

The rejection of claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over Mueller et al. '663 (hereinafter Mueller) is respectfully traversed and should be withdrawn.

Mueller is directed to full swing voltage input / full swing voltage output bi-directional repeaters for high resistance or high capacitance bi-directional signal lines and methods therefor (Title).

In contrast, the present invention (claim 1) provides an input section configured to generate a first control signal and a second control signal in response to an input signal and a select signal. The input section comprises a first device and a second device each having a source and a drain configured to connect the input signal with the first control signal and second control signal in response to the select signal. One or more third devices each have a source and a drain configured to connect the first control signal and the second control signal when in a first mode. Claims 15 and 16 include similar recitations. Mueller does not teach or suggest each and every element of the presently claimed

invention. As such, the presently claimed invention is fully patentable over Mueller and the rejection should be withdrawn.

Specifically, assuming, *arguendo*, (i) the devices 708 and 710 in FIG. 7 of Mueller are similar to the presently claimed first and second devices, (ii) the device 608 in FIG. 6 of Mueller is similar to the presently claimed one or more third devices, (iii) the signal 408 of Mueller is similar to the presently claimed input signal, (iv) the signal EN_RD of Mueller is similar to the presently claimed select signal and (v) the signal 406 of Mueller is similar to the presently claimed output signal (as suggested in the last seven lines on page 2, and lines 1-3 on page 3 of the Office Action and for which Applicants' representative does not necessarily agree), Mueller does not teach or suggest an apparatus comprising both (i) **a first device and a second device each having a source and a drain configured to connect the input signal with the first control signal and the second control signal in response to the select signal AND (ii) one or more third devices each having a source and a drain configured to connect the first control signal and the second control signal when in the first mode, as presently claimed.** In particular, contrary to the position taken in the Office Action that one skilled in the art would add the device 608 in FIG. 6 of Mueller to the circuit in FIG. 7 of Mueller (see lines 9-12 on page 3 of the Office Action), Mueller states:

FIGS. 5-7 illustrate, in accordance with **various embodiments** of the present invention, **various alternative**

configurations of a full swing voltage bi-directional tri-state buffer circuit (column 4, lines 29-33 of Mueller).

Thus, Mueller expressly states that the circuits of FIG. 6 and FIG. 7 are alternatives. Furthermore, Mueller explains how the circuit of FIG. 6 operates differently than the circuit of FIG. 7.

Specifically, with respect to FIG. 6, Mueller states:

FIG. 6 illustrates, in greater detail and in accordance with yet another embodiment of the present invention, a bi-direction full swing voltage repeater circuit 600. . . . **In this particular implementation, the input stage 602A includes a transmission gate 608** that can pass the voltages received from node 408 responsive to enable control signal EN_RD and its complement EN_RDC (column 8, lines 6-13 of Mueller, emphasis added).

Mueller teaches that the transmission gate 608 is included so that when the transistor 624 is switched ON and the transistor 626 is switched OFF, nodes 614 and 616 are both driven by the transistor 624 (column 8, lines 38-53 of Mueller). Conversely, when the transistor 624 is OFF and the transistor 626 is ON, the transmission gate 608 allows the transistor 626 to drive both of the nodes 614 and 616 (see column 8, line 54 through column 9, line 4 of Mueller). Thus, without the transmission gate 608 one of the nodes 614 and 616 would not be driven because of the switching ON and OFF of the transistors 624 and 626 in response to the input signal 408.

In contrast to the circuit 600 in FIG. 6 of Mueller where one of the transistors 624 and 626 is OFF when the other is ON, the

transmission gates 708 and 710 in FIG. 7 of Mueller are either both ON or both OFF. Specifically, Mueller provides:

In FIG. 7, the control stage 704A of the uni-directional repeater circuit 700A includes two transmission gates 708 and 710 that are implemented between nodes 712 and 714. **Transmission gates 718 [sic] and 710 can pass voltages between nodes 712 and 714, responsive to control signal EN_RD and its complement.** In this particular embodiment, the input stage 702A is implemented by an inverter 718 that inverts the input values at node 408 and outputs the inverted values to control stage 704A (column 9, lines 5-13 of Mueller, emphasis added).

Since both transmission gates 708 and 710 of Mueller are switched ON at the same time, the circuit 700 in FIG. 7 of Mueller does not have the condition for which Mueller uses the device 608. Specifically, in the circuit 700 of Mueller, the gate of the device P2 and the gate of the device N2 are both driven in response to the input signal 408 because the transmission gates 708 and 710 are switched ON together. The Office Action fails to provide any objective evidence or a convincing line of reasoning why, in light of the teachings of Mueller, one skilled in the art, with no knowledge of the presently claimed invention, would add the transmission gate 608 to the circuit 700 in FIG. 7 of Mueller. "It is improper, in determining whether a person of ordinary skill would have been led to the combination of references, simply to 'use that which the inventor taught against its teacher'" (*In re Lee*, 61 USPQ2D 1430, 1434 (Fed. Cir. 2002), quoting *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983)).

Furthermore, Mueller expressly states that FIGS. 6 and 7 are **alternative** embodiments. Therefore, Mueller does not teach or suggest combination of the devices 708, 710 and 608 in the same circuit. The fact that the presently claimed invention involves a combination of features previously used in two separate devices, is not fatal to patentability (*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 488 (Fed. Cir. 1984)). That an inventor discovered an improvement that escaped those who came before is indicative of non-obviousness, not obviousness (*Fromson v. Anitec Printing Plates, Inc.*, 45 USPQ 2d 1269, 1276 (Fed. Cir. 1997), *cert. denied*, 525 U.S. 817 (1998)). The fact that Mueller does not disclose a single embodiment including all of the transmission gates 608, 708 and 710 further evidences the novelty of the presently claimed invention. Therefore, since Mueller does not teach or suggest the desirability of the combination of each and every element of the presently claimed invention and the Office Action does not present objective evidence or a convincing line of reasoning why one of ordinary skill in the field of the invention with no knowledge of the presently claimed invention would be compelled to make such a combination (see page 4, lines 7-15 of the Office Action), the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Furthermore, claims 2-14 and 17-21 depend, either directly or indirectly, from claims 1 or 16 which are believed to be allowable. As such, the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

COMPLETENESS OF THE OFFICE ACTION

The Office Action does not appear to present a proper rejection with respect to claims 3-14 and 17-21. 37 CFR § 1.104(b) requires that the Examiner's action be complete as to all matters. Specifically, MPEP §707.07(d) provides "where a claim is refused for any reason relating to the merits thereof it should be 'rejected' and the ground of rejection **fully and clearly stated**" MPEP §707.07(d) further provides that "an omnibus rejection of the claim 'on the references and for the reasons of record' is stereotyped and usually not informative and **should therefore be avoided**." The statements on page 3, lines 17-21 of the Office Action that with regard to claims 3-14 and 17-21 "the reference also meets all the claimed limitations in these claims" clearly represent the type of omnibus rejections that are to be avoided because they are not informative as to why the reference is considered to meet the claimed limitations. As such, the rejections of claims 3-14 and 17-21 do not fully and clearly state the grounds of the rejections as required by MPEP §707.07(d).

Furthermore, the Office Action does not appear to have put forth proper factual support for a *prima facie* case of obviousness with respect to claims 2-14 and 17-21 (MPEP §2142). As such, the presently claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Furthermore, to bring the prosecution to as speedy a conclusion as possible, and at the same time to deal justly by both the Applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and **the references fully applied** (MPEP §706.07). The statements on page 3, lines 17-21 of the Office Action that with regard to claims 3-14 and 17-21 "the reference also meets all the claimed limitations in these claims" clearly provide no indication of how the cited reference is being applied to the claim limitations.

With respect to claim 3, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "an output load of the output signal is independent of an input load of the input signal."

With respect to claim 4, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the output load is independent of the select signal."

With respect to claim 5, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the first and second control signals are configured to eliminate output loading of the output signal from the input signal."

With respect to claim 6, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "coupling of non-selected inputs to the output signal is eliminated."

With respect to claim 7, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the output signal comprises a compliment of the input signal when in the first mode."

With respect to claim 8, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "further comprising two or more of each of the input section or the output section, configured as a multiplexer or a programmable interconnect matrix."

With respect to claim 9, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the input

section is further configured in response to a compliment of the select signal."

With respect to claim 10, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the first and the second modes are controlled by the first and the second control signals."

With respect to claim 11, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "wherein the input section further comprises: one or more fourth devices coupled to the first and the second devices and configured to generate the first and the second control signals."

With respect to claim 12, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the one or more fourth devices are coupled to the select signal and a supply voltage or a ground voltage."

With respect to claim 13, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "wherein the output section comprises: one or more fifth devices; and one or more sixth devices, where the fifth and the sixth devices are

configured to present the output signal in response to the first and the second control signals."

With respect to claim 14, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the first mode comprises an enabled mode and the second mode comprises a disabled mode."

With respect to claim 17, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the connecting step further comprises: turning on one or more second devices; and turning off one or more third devices."

With respect to claim 18, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the isolating step further comprises: turning on the one or more third devices; and turning off the one or more first and the one or more second devices."

With respect to claim 19, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the first mode comprises an enabled mode and the second mode comprises a disabled mode."

With respect to claim 20, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the bit comprises a multiplexer bit."

With respect to claim 21, Applicants' representative respectfully requests that the Office provide an explanation of how the cited reference applies to the claim limitation "the output signal tracks the input signal and swings from rail to rail."

Because the Office Action is silent regarding how the cited reference is applied to claims 3-14 and 17-21, the Office Action does not clearly articulate the rejections and does not provide the information for Applicant to judge the propriety of continuing the prosecution (37 CFR § 1.104(a)(2)). Therefore, Applicants' representative respectfully requests that a full and clear articulation of how Mueller is applied to the specific limitations of each of the presently pending claims be provided or the rejection withdrawn.

RECONSIDERATION OF THE FINALITY OF THE PREVIOUS OFFICE ACTION

Furthermore, because the Office Action does not appear to have properly addressed either (i) the specific grounds for the rejection of each of the claims 3-14 and 17-21 or (ii) the previous objection to the lack of articulation of the basis for the rejection of claims 3-14 and 17 21 (see page 12, lines 5-24 of the

Response filed January 23, 2004), Applicants' representative respectfully requests that the finality of the Office Action be withdrawn.

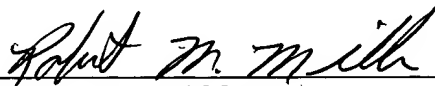
Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

The Examiner is respectfully invited to call the Applicants' representative should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge our office Account No. 50-0541.

Respectfully submitted,

CHRISTOPHER P. MAIORANA, P.C.



Robert M. Miller
Registration No. 42,892
24840 Harper Avenue, Suite 100
St. Clair Shores, MI 48080
(586) 498-0670

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